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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,105	05/29/2007	Hans-Helmut Bechtel	PHDE030405 US	2071

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EXAMINER

HOLLWEG, THOMAS A

ART UNIT	PAPER NUMBER
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2879

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,105	Applicant(s) BECHTEL ET AL.	
	Examiner Thomas A. Hollweg	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-9 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9 and 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgment of Amendment

1. Applicant's Amendment of June 28, 2010, is acknowledged. No claims are added or canceled. Claims 1, 4-9, and 11-16 are currently pending.
2. The claim listing submitted on June 28, 2010, does not include claim 16. It is assumed that this is an inadvertent omission. Claim 16 submitted with the claim listing on January 13, 2010, will be considered in the Office Action. Please include a full listing of all the pending claims in any further submissions.

Drawings

3. The replacement drawings submitted on June 28, 2010, are accepted, showing the passivating layer over the flake structure of claim 11. However, the drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 31. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

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informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 4, 6-9 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura, U.S. Patent Application Publication No. 2002/0101152 A1, in view of Kaufmann et al., U.S. Patent No. 4,492,432.**

6. **With regard to claim 1**, in figure 5, Kimura discloses a display comprising a ground plate (208); at least one light emitting layer (202) and at least one isolating separator layer (220), each isolating separator layer (220) being reflective and being positioned in contacting manner on said ground plate (208), wherein the at least one emitting layer, (200) and the at least one isolating separator layer (220) are positioned immediately adjacent to each other in a contacting manner [0107-0116].

7. Kimura does not expressly disclose that the isolating separator layer comprises a metal material having a flake structure.

8. Kaufmann, in the figure discloses a display device having a highly reflective layer (11) where the layer comprises a metal material having a flake structure (Abstract; col. 2, lines 45-51).

9. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Kimura device where the isolating separator layer comprises a metal material having a flake structure, as taught by Kaufmann, because a metal flake structure provides excellent reflection.

10. **With regard to claim 4**, in the figure, Kaufmann teaches that the flake structure comprises a plurality of aluminum-flakes (Abstract; col. 2, lines 45-51).

11. **With regard to claim 6**, in figure 5, Kimura discloses that the surface of said at least one isolating separator (220) layer is specular reflective [0099].

12. **With regard to claim 7**, in figure 5, Kimura discloses that light impinging on said at least one isolating separator layer (220) in an angle is at least to a part reflected in a different angle [0099].

13. **With regard to claim 8**, the examiner notes that all of the claim limitations are characteristics of the display as operated and do not expressly limit the structure of the claimed device. Kimura does not expressly disclose the efficiency of the disclosed display, however, it anticipates all of the structural limitations of claim 8. These limitations have been considered, but absent a showing of a further limiting of the structure of the display, these limitations cannot distinguish the claimed display over Kimura. Further, because Kimura discloses all of the structural limitations of claim 8, and discloses that the purpose of the disclosed invention is to improve efficiency [0282], as operated, the Kimura display will be characterized in that the efficacy of the display for white light with a correlated colour temperature of 6500 K is at least ≥ 0.5 lumen/W.

14. **With regard to claim 9**, the examiner notes that the claim limitation “the display is formed by an ink-jet printing or photolithography or vacuum deposition or a combination of these processes” is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation has been considered, but not patentably distinct over Kimura (see MPEP 2113). The Examiner notes further that the claimed methods for making are disclosed by Kimura [0208-0245].

15. **With regard to claim 11**, in the figure, Kaufmann teaches a passivating layer over the flake structure (Abstract; col. 2, lines 45-51).

16. **With regard to claim 12**, in the figure, Kaufmann teaches that the passivating layer comprises an oxide (Abstract; col. 2, lines 45-51).

17. **With regard to claim 13**, in figure 5, Kimura discloses that the metal material comprises one of vanadium (V), chromium (Cr), and manganese (Mn) [0091, 0099].

18. **With regard to claim 14**, in the combined Kimura and Kaufmann device discussed in the rejection of claim 1 above, the flake structure has a predetermined orientation relative to the ground plate.

19. **With regard to claim 15**, in the combined Kimura and Kaufmann device discussed in the rejection of claim 1 above, the orientation of the flake structure is adjustable (during manufacture).

20. **With regard to claim 16**, the examiner notes that all of the claim limitations are characteristics of the display as operated and do not expressly limit the structure of the claimed device. Kimura does not expressly disclose the efficiency of the disclosed display, however, it anticipates all of the structural limitations of claim 8. These limitations have been considered, but absent a showing of a further limiting of the structure of the display, these limitations cannot distinguish the claimed display over Kimura. Further, because Kimura discloses all of the structural limitations of claim 8, and discloses that the purpose of the disclosed invention is to improve efficiency [0282], as operated, the Kimura display will be characterized in that the efficacy of the display for white light with a correlated colour temperature of 6500 K is at least ≥ 5.6 lumen/W.

21. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura in view of Kaufmann as applied to claim 1 above, and further in view of Bechtel et al., U.S. Patent Application Publication No. 2003/0011306 A1.

22. **With regard to claim 5**, all of the limitations are disclosed by Kimura and Kaufmann, as discussed in the rejection of claim 1 above. However, Kimura and Kaufmann do not expressly disclose polarization plates on the display.

23. Bechtel teaches a $\lambda/4$ plate and a linear polarization layer is positioned on an organic electroluminescent display device to suppress the reflections of external light from the reflective surfaces internal to the device [0051-0052].

24. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Kimura and Kaufmann display comprising at least one $\lambda/4$ plate and at least one linear polarisation layer positioned on the ground plate opposing

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said isolating separator layer in such a way, that ambient light that moves through the ground plate towards the isolating separator layer as well as light that moves from said isolating separator layer towards said ground plate passes said at least one $\lambda/4$ plate and at least one linear polarisation layer. These additional layers would suppress the reflections of external light from the reflective surfaces internal to the device, as taught by Bechtel.

Response to Arguments

25. Applicant first argues that the prior art of record does not meet the claim limitation that “the at least one light emitting layer, and the at least one isolating separator layer are positioned immediately adjacent to each other in a contacting manner”. In support of this argument Applicant points to figure 2 of Kimura. However the above rejection relies upon figure 5 of Kimura to show this limitation. Figure 5 shows the isolating separator 220 and the light emitting layer 202 positioned immediately adjacent to each other in a contacting manner.

26. Secondly Applicant argues that one having skill in the art would not be motivated to combine Kimura with the type of reflector structure taught by Kaufmann because Kaufmann is an LCD device, and does not disclose a light emitting layer or an isolating separator. Applicant further argues that the 35 U.S.C. § 103 rejection above does not proffer the benefit of ‘excellent reflection’ accorded by the metal flake structure.

27. This argument is not found persuasive for the following reasons. First, Kimura discloses all of the limitations of at least claim 1, except it does not expressly disclose a specific structure for the reflector. In constructing the Kimura device, one skilled in the

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art would want to form the reflector 220 with a structure that is highly efficient.

Kaufmann teaches that a metal material flake structure provides excellent reflection in a display device to redirect light toward the viewer of the display. One skilled in the art would look to other display devices where highly efficient reflection is necessary, and therefore would look to Kaufmann for the specific structure for a reflector for use in a display. Further the Kimura reflector and the Kaufmann reflector have further similarities because they are both formed as part of an electrode.

28. Also, because Kimura is silent as to the specific structure of the reflector, combining the Kaufmann reflector structure does not replace any portion of the Kimura device, but rather fills in details known in the prior art necessary to construct the Kimura device. One skilled in the art would understand that the Kaufmann flake reflector structure, having excellent reflection and which can be formed with an electrode, would be an ideal choice for the reflector in the Kimura device.

Conclusion

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

30. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Hollweg whose telephone number is (571) 270-1739. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm E.S.T..

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TH/

/NIMESHKUMAR D. PATEL/
Supervisory Patent Examiner, Art Unit 2879